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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,682	08/18/2003	Mitsuhiko Yamamoto	03481/LH	4603

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FRISHAUF, HOLTZ, GOODMAN & CHICK, PC
220 Fifth Avenue
16TH Floor
NEW YORK, NY 10001-7708

EXAMINER	
SMITH, NICHOLAS A	

ART UNIT	PAPER NUMBER
1753	

MAIL DATE	DELIVERY MODE
07/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/643,682	YAMAMOTO ET AL.	
	Examiner	Art Unit	
	Nicholas A. Smith	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-7,9,10,25,27 and 30-45* is/are pending in the application.

4a) Of the above claim(s) *30-35* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-7,9,10,25,27 and 36-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 1-2, 4-7, 9-10, 25, 27 and 36-37 remain for examination. Claims 38-45 are new. Claims 30-35 have been withdrawn from consideration.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-2, 4-7, 9-10, 25, 27 and 36-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wei (US 4,350,564) in view of Yokoyama et al. (US Patent 6,294,467).

4. Regarding claims 1-2, 4-7, 9, 25 and 40, Wei teaches (col. 3 lines 19-51) a chemical treatment method by which a metal film formed on a substrate is etched into a predetermined pattern comprising: providing a material comprising a first metal film formed on a substrate and a second metal film formed on said first metal film, said first metal film having a metal passivated layer of an exposed portion of first metal film corresponding to the patterned portion of the second metal film, said first metal film being formed from chromium, said second metal film having a predetermined pattern, immersing said material in a dilute hydrochloric solution, whereby the chromium layer is connected in an electrolytic circuit to the aluminum layer such that the chromium is a cathode and electric current occurs to carry out an electrolysis, thereby causing

hydrogen to be released at the chromium interface which reduces or depassivates the oxide on the film of chromium, and then etching the chromium by contacting an exposed portion of said chromium with the dilute hydrochloric acid to form the predetermined pattern. The examiner asserts that the dipping occurs at the same time as the immersing. Furthermore, Wei discloses that the portion of chromium underneath the aluminum portion **18a** (Wei, Figure 3C) does not preclude the removal and depassivation of the chromium oxide film and layer (Wei, col. 3, lines 30-36).

5. Regarding claims 10, 27, 41 and 43, Wei teaches (col. 4 lines 22-28) a chromium nickel alloy.

6. In regards to claims 1 and 5 features "and a positive electrode," "the positive electrode and" and "the cathode and the positive electrode," Wei does not specifically disclose a positive electrode that is separate from a material.

7. Yokoyama et al. pertains to reducing metal oxide films in manufacturing of patterned devices. Yokoyama et al. teaches use of a plate electrode (Fig. 1(c), col. 5, line 48 to col. 6, line 3) for reduction of a metal oxide film. It would have been obvious to one of ordinary skill in the art to substitute Wei's method of metal oxide film reduction via application of secondary, pattern metal as an anode with Yokoyama et al.'s method of metal oxide film reduction via application of a separate plate as an anode in order to reduce the metal oxide film (Yokoyama et al., Fig. 1(c), col. 5, line 48 to col. 6, line 3).

8. In regards to claims 1 and 5 feature "wherein a portion of the first metal film on said material is dipped in to the acidic reduction treatment solution," Wei discloses a method wherein a portion of the first metal film on a material is dipped in to an acidic

reduction treatment solution (col. 3, lines 19-51). It is noted that a portion (x) can range from $0\%<x\leq 100\%$.

9. In regards to claims 4, 38-39 and 42 feature "chloride," Wei discloses such a feature (col. 3, lines 19-51).

10. In regards to claim 36 and 44, Wei discloses wherein a passivated layer is an oxide layer (col. 3, lines 33-36).

11. In regards to claims 37 and 45, see paragraph 7 above.

Response to Arguments

12. Applicant's arguments filed 26 April 2007 have been fully considered but they are not persuasive. In regards to Applicant's argument that the presence of aluminum (second metal layer) in the patterned portion (**18a**, Figure 3C) implies there is no passivation portion of chromium, please see reasons stated above in paragraph 4.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas A. Smith whose telephone number is (571)-272-8760. The examiner can normally be reached on 8:30 AM to 5:00 PM, Monday through Friday.

14. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Susy Tsang-Foster can be reached on (571)-272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NAS

Supervisory Patent Examiner